

REMARKS

Claims 8-14 and 17-30 are pending in the case. The Examiner's reconsideration of the rejection is respectfully requested in view of the remarks.

Claims 8-14 and 17-30 have been rejected under 35 USC 103(a) as being unpatentable over Fukunaga (US Patent No. 6,346,940) in view of Manwaring et al. (US Patent No. 5,638,819). The Examiner stated essentially that the combined teachings of Fukunaga and Manwaring teach or suggest all the limitations of claims 8-14 and 17-30.

Claim 8 claims, *inter alia*, "a rendering module for rendering a virtual view of the first graphic target depth marker overlaid on an actual view of an object including the target, and rendering a virtual view of the graphic instrument depth marker overlaid on the actual view such that a proximity of a predetermined portion of the instrument to the target is ascertainable based on a position of the graphic instrument depth marker with respect to the first graphic target depth marker." Claim 19 claims, *inter alia*, "rendering a virtual view of a graphic instrument depth marker indicating a depth of an instrument overlaid on the actual view such that a proximity of a predetermined portion of the instrument to the target is ascertainable based on a position of the graphic instrument depth marker with respect to the first graphic target depth marker." Claim 23 claims, *inter alia*, "rendering a virtual view of a first graphic target depth marker indicating a first target depth of a hidden target overlaid on an actual view of an object including the target; and providing an instrument depth marker visible in the actual view such that a proximity of a predetermined portion of the instrument to the target is ascertainable based on a distance between the first graphic target depth marker and the instrument depth marker." Claim 27 claims, *inter alia*, "a rendering module for rendering a virtual view of the first graphic target depth marker overlaid on an actual view of an object including the target, wherein the actual view includes an instrument depth marker indicating a depth of an instrument relative to the virtual view of the first graphic target depth marker overlaid on the actual view."

Fukunaga teaches an image processing system installed adjoining an electronic endoscope system (see col. 5, lines 30-35). Image processing system views (virtual views) are shown on a display unit while views from the electronic endoscope (actual

views) are shown on a monitor (see col. 5, lines 31-36, col. 6, lines 12-18, and Figure 3). Fukunaga does not teach or suggest a rendering module wherein, “a rendering module for rendering a virtual view of the first graphic target depth marker overlaid on an actual view of an object including the target,” as claimed in claim 8, “rendering a virtual view of a graphic instrument depth marker indicating a depth of an instrument overlaid on the actual view” as claimed in claim 19, “rendering a virtual view of a first graphic target depth marker indicating a first target depth of a hidden target overlaid on an actual view of an object including the target” as claimed in claim 23, “a rendering module for rendering a virtual view of the first graphic target depth marker overlaid on an actual view of an object including the target,” essentially as claimed in claim 27. Fukunaga’s system and method does not render an overlay of a virtual view on an actual view, essentially as claimed in claims 8, 19, 23, and 27. Fukunaga teaches that the renderings are shown over a virtual view (see col. 5, lines 30-35). The actual view of Fukunaga is displayed in a separate display, different from the virtual view. Fukunaga does not teach or suggest overlaying a virtual image on an actual view. Therefore, Fukunaga fails to teach or suggest all the limitations of claims 8, 19, 23, and 27.

Manwaring teaches a system and method for guiding an instrument to a target (see Abstract). Manwaring teaches a display comprising separate views of live video and a graphic guidance object (see col. 4, lines 46-52 and Figure 2). Manwaring does not teach or suggest a rendering module wherein, “a rendering module for rendering a virtual view of the first graphic target depth marker overlaid on an actual view of an object including the target,” as claimed in claim 8, “rendering a virtual view of a graphic instrument depth marker indicating a depth of an instrument overlaid on the actual view” as claimed in claim 19, “rendering a virtual view of a first graphic target depth marker indicating a first target depth of a hidden target overlaid on an actual view of an object including the target” as claimed in claim 23, “a rendering module for rendering a virtual view of the first graphic target depth marker overlaid on an actual view of an object including the target,” essentially as claimed in claim 27. Manwaring treats a live view separately from the graphic guidance object and tomographic images (see Figure 2 and col. 4, lines 45-52). The guidance object appears separate from an actual view or live images and tomography images, which are captured prior to the insertion and used as a

virtual view. Nowhere does Manwaring teach or suggest a virtual view overlaid on an actual view. Therefore, Manwaring fails to cure the deficiencies of Fukunaga.

The combined teachings of Fukunaga and Manwaring do not teach or suggest a graphic target depth marker overlaid on an actual view.

Claims 9-14, 17 and 18 depend from claim 8. Claims 20-22 depend from claim 19. Claims 24-26 depend from claim 23. Claims 28-30 depend from claim 27. The dependent claims are believed to be allowable for at least the reasons given for the independent claims. At least claims 14, 22, 26 and 30 are believed to be allowable for additional reasons.

Claims 22 and 26 claim, *inter alia*, “rendering a virtual graphic path marker to which a portion of the instrument visible in the actual view is alignable.” Claims 14 and 30 claim, *inter alia*, “the rendering module renders a virtual view of the graphic path marker as an overlay on the actual view to which a portion of the instrument visible in the actual view is alignable.”

Fukunaga teaches a view from an endoscopic device (see col. 5, lines 30-35). Fukunaga does not teach or suggest rendering, or a rendering module for rendering a virtual view of a path marker overlaid on an actual view “to which a portion of the instrument visible in the actual view is alignable” essentially as claimed in claims 14, 22, 26 and 30. Nowhere does Fukunaga teach or suggest that the endoscope or other instrument becomes visible in an actual view. Therefore, Fukunaga fails to teach or suggest all the limitations of claims 14, 22, 26 and 30.

Manwaring teaches live video images from an instrument (see col. 4, lines 46-52). Manwaring does not teach or suggest “a portion of the instrument visible in the actual view” as claimed in claims 14, 22, 26 and 30. Manwaring’s system and method teaches an indication of a probe tip in a graphic object (see Figure 4). The graphic object is not overlaid on an actual view, much less visible in the actual view, in that it is a virtual graphic would not appear in any actual view. Indeed, Manwaring states, “indicators 88 and 94 represent logical constructions which may be carried out in memory 18 (see FIG.1) and not actual visual images viewable through display 24 (see FIG. 1)” (see col. 9, lines 25-29). Nowhere does any portion of the instrument appear in the live video. Therefore, Manwaring fails to cure the deficiencies of Fukunaga.

The combined teachings of Fukunaga and Manwaring fail to teach or suggest “a portion of the instrument visible in the actual view” as claimed in claims 14, 22, 26 and 30.


The Examiner’s reconsideration of the rejection is respectfully requested.

Further, while claims 19, 23 and 27 have been “rejected based upon similar rational as above claim 8,” which claims, *inter alia*, “a virtual view of the graphic instrument depth marker”, the Office Action is not believed to address the specific limitations of claims 23 and 27. For example, the Office Action does not address “providing an instrument depth marker visible in the actual view” as claimed in claim 23 or that an “actual view includes an instrument depth marker” as claimed in claim 27. Upon review of Fukunaga and Manwaring, Applicants believe that the combined teachings of Fukunaga and Manwaring fail to teach or suggest an instrument depth marker visible in an actual view, essentially as claimed in claims 23 and 27.

For the forgoing reasons, the present application, including claims 8-14 and 17-30, is believed to be in condition for allowance. The Examiner’s early and favorable action is respectfully urged.

Respectfully Submitted,

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